


Claims

- 1.) A needleless injection device with a lower part receiving an agent cartridge and an upper part providing the energy needed for injection; the upper part contains energy store units, namely start unit(s) and supplementary unit(s), capable of elastic form-change; furthermore, the device has a lock maintaining the tension of the energy store units and components to release the lock; **characterized by that** a long tube section (13) of the lower part (1), with external thread (14), stretches into the upper part (2) and at the bottom fits into the short internal thread (44) of the adjoining part (43) of the upper part (2), thus the lower part (1) is attached to the upper part (2) revolving manner, moving in a telescopic way, and results the tension state of the energy store units (3); at least one start unit (31), capable of storing min. 60%, preferably 80-90% of the total discharge energy (pressure), with the reversible elastic distortion at max. 25%, practically 15-20% of the internal length of the agent cartridge (8); wherein the start unit (31) is a bundle of polyurethane springs fitted inside the device (20) in a separate case (32), at stretching it is joined with the mean transferring the stretching power, preferably with the lock mechanism (4), by a spacer (33), having no contact with other energy store units (3), namely with supplementary unit(s) (35).
- 2.) The device according to claim 1 characterized by that the supplementary unit(s) (35) are  volute springs, comprising 2-8, preferably 4-5 volute springs fitted coaxially in each other, surrounding the geometric axis of the upper part (2), or using more supplementary units (35), these are positioned symmetrically around the geometric axis.
- 3.) The device according to claims 1 or 2 characterized by that practically the release mechanism (5) is a release button (51) situated at the top of the upper part (2), attached to a release rod (52) reaching down to the lock mechanism (4) in the axis of the upper part (2).
- 4.) The device according to any of claims 1 - 3 characterized by that the discharge hole (82) of the cartridge's (8) is manufactured from the cartridge's own material.

- 5.) The device according to any of claims 1 - 4 characterized by that the discharge hole (82) of the agents cartridge's (8) is situated precisely in the axis of symmetry of the cartridge's (8).